A Great Indian Bustard is the central focus of the image, standing in a field of tall, dry grass. The bird has a long, slender neck, a white patch on its wing, and a dark, mottled body. It is facing left. The background is a soft-focus landscape of green and yellow fields under a clear blue sky.

The Great Indian Bustard

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The Great Indian Bustard

The Great Indian Bustard *Ardeotis nigriceps*, endemic to the Indian sub-continent, is one of India's rarest birds. It also happens to be the most famous endangered bird of the country. While other rare birds like the Pinkheaded Duck, the Mountain Quail, the Jerdon's Courser, the Lesser Florican and the Forest Spotted Owlet are known only to keen bird lovers and conservationists, the Great Indian Bustard is known even to those remotely interested in nature. The bird has been the subject of a major conference organized in Jaipur in 1980 to focus attention on its dwindling numbers. It is the State Bird of Rajasthan, and four other states have taken conservation measures to save this majestic bird from extinction.



Distribution and Status

In the past, the Great Indian Bustard was widely distributed in the grassy plains and open scrub from Uttar Pradesh in the north to Tamil Nadu in the south, and from Sind (now Pakistan) in the west to Orissa in the east (see map). Hill or forested areas and wet tall grasslands of the Himalayan terai were avoided. Its preferred habitat is the grasslands of the semi-arid regions, and therefore, the main concentration of the Great Indian Bustard in the past was in western India—Rajasthan, northwest Madhya Pradesh and Gujarat, together with the tableland of the Deccan comprising partly Maharashtra, Andhra Pradesh and Karnataka.

Destruction of habitat and hunting are the two chief factors for the decline of bustard populations. With the explosion of human population the grassy plains so necessary for the bustard's survival were brought under cultivation. With humans came cattle, resulting in severe overgrazing. At present virtually no grassland habitats in India are free from human-related disturbance.

Hunting and trapping also played its role in the decline of the Great Indian Bustard. The bird is extremely wary and no doubt is difficult to approach on foot within shooting distance but is naively unconcerned of vehicles. The post second World War years brought an added dimension to its destruction. The disposal of war surpluses placed both jeeps and improved weapons in the hands of unscrupulous hunters. Independence and popular democracy brought proliferation of crop-protection guns. Within a decade, from 1945 onward, the Great Indian Bustard was literally shot out of existence from the greater part of its range.

Today the Great Indian Bustard survives precariously in a few isolated pockets in six Indian states—Gujarat, Rajasthan, Maharashtra, Karnataka, Andhra Pradesh and Madhya Pradesh. Western Rajasthan is the only area where it is found in a continuous stretch: in other states it has a disjointed distribution. It has disappeared from Uttar Pradesh, Punjab, Haryana, Orissa and Tamil Nadu, except for stray individuals here and there.



Typical bustard habitats are wide open areas

Total population

Owing to the bustard's semi-nomadic nature and the remoteness of its habitats, it is not easy to estimate the bird's population. However, we estimate it between 1500 and 2000 birds in the whole country. State-wise it breaks up into: Rajasthan, 1000-1500; Gujarat, less than 50; Madhya Pradesh, about 100; Maharashtra, about 100; Andhra Pradesh, about 100; and Karnataka less than 75.

Bustard Sanctuaries

Except for Gujarat, all the five other states where the Great Indian Bustard is presently found have established bustard sanctuaries to protect the bird. Some of the well-known among them are: Karera in Madhya Pradesh, Sonkhaliya and the Desert National Park in Rajasthan, Nanaj in Maharashtra, Rollapadu in Andhra Pradesh and Rannibennur in Karnataka.



The Great Indian Bustard is totally protected under the Wildlife(Protection) Act of 1972. Its shooting, hunting or trapping is illegal. Offenders are fined up to Rs. 2000 and/or jailed for six years.



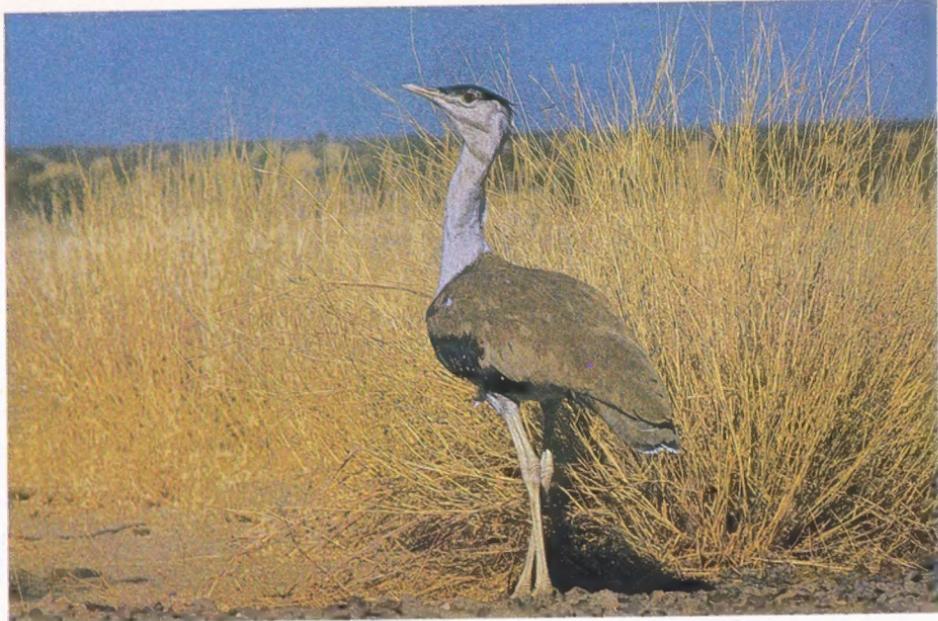
The Great Indian Bustard enjoys total protection

State Bird

The Great Indian Bustard was declared the State Bird of Rajasthan on 21 May 1982.

Bustard Biology

A big bustard can reach up to 122 cm in height while the hen is smaller i.e. up to 92 cm. Among birds, the Great Indian Bustard with a few other bustard species show the greatest sexual size dimorphism. In weight the male is nearly double that of the female.



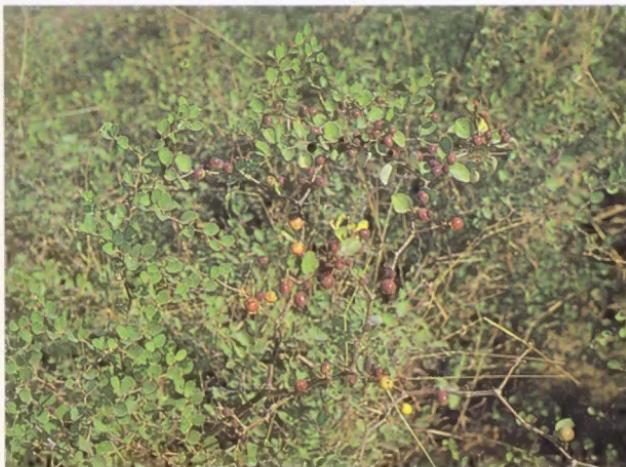


A female bustard is 25 to 30 cm smaller than the male

Food

The Great Indian Bustard is an omnivorous feeder. Its favourite food appears to be insects but the diet varies from snakes, lizards, scorpions to wheat, bengal gram, groundnut, millet etc. Studies on its feeding habits show that it varies its diet from season to season and from area to area. Opportunistic feeding habits make it easier for the bustard to survive in inhospitable areas.

Ber *Zizyphus* is relished by bustards



Rocket Salad or *Taramira* *Eruca sativa*, along with *Bengal Gram* and *Groundnut*, are favoured crop plants of the Great Indian Bustard





Grasshoppers form an important part of the bustard diet



Bustards drink regularly wherever water is available

The Great Indian Bustard is perfectly adapted to its semi-arid environment where surface water is not easily available. It can live without water for days and weeks but where water is available it drinks almost daily. During summer it drinks more frequently. However, even in the coldest months, it will not hesitate to drink, if it comes across a small puddle.

Breeding

The breeding season of the Great Indian Bustard varies from area to area but everywhere it coincides with the seasonal increase in insect population because the growing chick needs proteinous diet. In the Deccan plains, Gujarat and Thar Desert, they breed during the monsoon when the precipitation turns seemingly barren land into verdant grasslands. In northwest Madhya Pradesh, however, the bustard starts breeding from March with the appearance of fresh insect life following spring. In the Kurnool district of Andhra Pradesh, while the main breeding season is during the monsoon, there is also a short breeding period in the summer months. Change of the breeding season from area to area shows the adaptability of the bustard to local conditions.



A female amongst dry scrub, which is found in typical bustard areas

Courtship

The Great Indian Bustard has an elaborate and fantastic courtship display which occurs in the breeding season. The adult male bustard selects some prominent, slightly elevated spot from where he can see and can be seen for a long distance around. Every morning and evening, the cock struts around in his territory, tail raised above the back, and a special gular or neck pouch below the chin elongated to dangle like a large balloon in front of his legs. During the peak display period, the male stands in one place, head held high and every so often gulps air and produces a booming call. The mechanism of this 'boom' is not yet clear. The call is not very loud but carries far. Depending upon wind direction, it may be heard up to a kilometre away.

Courtship display is generally restricted to the cooler parts of the day but during cloudy weather, display may be seen at any hour. In summer, when the moon is full, some birds even display at night!

The courtship display has two main functions (i) to attract receptive females, and (ii) to repel competitive males.



A cock bustard in a display pose

Territoriality



In the non-breeding season, cock bustards of an area join together and great camaraderie prevails till the next breeding season

Adult male Great Indian Bustards are extremely territorial during the breeding season. Fights between rival males are common and generally the territory owner wins the battle. Immature males and females are, however, tolerated in the territory.

Mating system of the Great Indian Bustard reveals that it is possibly a promiscuous species. The hen moves from territory to territory and mate with a male of her choice. Most of the mating takes place on the male's display ground, thus the dominant cock of an area gets the attention of most of the hens.



A male displaying near a female

Nesting

A typical nest of the Great Indian Bustard



The bustard is a ground breeder and makes no attempt at nest building. The nest is a mere scrape in the ground in some secluded spot. One, rarely two, eggs are laid. Clutch-size tendency is possibly inherited, for in the closely-related Australian Bustard some hens always lay two eggs in captivity while others only one. The male bustard does not take any part in incubation or rearing of the chick.

As only one egg is generally laid, it is not easy to establish precise incubation period of the Great Indian Bustard in the wild for it is unlikely that an observer would find the egg on the *first* day it is laid. Nevertheless, our studies indicate that the incubation period is about a month.



A newly hatched chick with its protective colouration



Blackbuck and chinkara are the common inhabitants of many bustard areas

Natural Enemies

An adult Great Indian Bustard has very few natural enemies. One of its earstwhile predators, the cheetah, is extinct in India, and the wolf has become extremely rare. Jackal or fox are no match for an adult bustard. However, its eggs and chicks must contend with fox, jackal, mongoose, monitor lizards and raptors. The bird's greatest enemy, ofcourse, is Man, who robs the bustard of its habitat and hunts it for its flesh. As though this were not bad enough, his cattle often trample the eggs and chicks.



*Ground predators like foxes are the greatest danger to bustard eggs and chicks
Birds of prey like the Short-toed Eagle are no match for an adult bustard but they can harm a chick*



Conservation

Though the Great Indian Bustard has increased in some places in recent years, thanks to strict conservation measures, its future is still not very bright. The bird is still shot or trapped in some places, and more importantly, its habitat is deteriorating at a fast rate. India has a huge livestock population and all bustard habitats suffer from severe overgrazing. Development of Indira Gandhi Canal and concomitant human colonization in western Rajasthan will further fragment bustard habitats. Most bustard sanctuaries are in agricultural areas where it is difficult to manage the habitat for the bustard. Ironically, the bird is legally protected—but not its home! Inspite of all these difficulties, however, the Great Indian Bustard can be saved by judicious landuse. Measures like soil conservation, wasteland development, afforestation and pasture development can be integrated with bustard conservation. If our degraded grasslands are restored, it will not only increase fodder production but also benefit the bustard.

Apart from the problem of habitat degradation, all the bustard sanctuaries have their own peculiar problems depending upon the climate, livestock and human population pressures, landuse practices and future developmental needs. In some areas it is a question of restriction of grazing to allow recovery of natural vegetation, while in other areas, vegetation has to be cut down or rotationally grazed to make the habitat suitable for the bustard. In the Karera Bustard Sanctuary mere realignment of the proposed canal will save the most important bustard breeding grounds, while in the Rollapadu Bustard Sanctuary, the frequent fires in the grassland have to be controlled.



Only a few grassland areas remain where the bustard can live in peace

You take my life
When you do take the means
Whereby I live

Shakespeare – The Merchant of Venice



A great drawback for the conservation and management of the Great Indian Bustard and its habitat is lack of data on its movement, longevity, fledgling period, population structure and dynamics. Studies conducted by the Bombay Natural History Society were severely restricted in scope due to lack of permission to mark the birds for identification. Though good data was collected on food and feeding habits, nesting behaviour, courtship behaviour, and the present distribution, we still do not know how far the bustard ranges. Do we see the same birds in different areas or are they different individuals? Male bustards have some traditional display grounds. Do the same individual occupy a particular ground every year or is there a yearly change? We cannot answer these questions unless the birds are marked for identification and modern methods like radio-telemetry are used for studies.

Future Management Priorities

**All the areas where viable bustard populations are present should be effectively protected.*

**Grassland plots of not less than 100 hectares should be developed in the distributional range of the bustard to allow undisturbed breeding grounds.*

**An all-India project on the pattern of Project Tiger should be evolved for the Great Indian Bustard.*

**Monitoring is necessary in assessing the impact of conservation measures and planning future needs. Annual census of the bustard numbers in all the important areas should be done, involving both government and the non-government agencies.*

**More in-depth studies on marked birds should be done using colour bands and radio-telemetry.*

Great Indian Bustard Sanctuaries in India

| State | Name | Approximate Number of bustards | Size |
|----------------|------------------------------|--------------------------------|------------|
| Andhra Pradesh | 1. Rollapadu | 50-60 | 250 ha |
| Karnataka | 2. Rannibennur | 10-15 | 123 sq km |
| Madhya Pradesh | 3. Karera | 30-35 | 202 sq km |
| | 4. Ghatigaon | 10-15 | 512 sq km |
| Maharashtra | 5. Bustard Sanctuary (Nanaj) | 50-60 | 7818 sq km |
| Rajasthan | 6. Kundanpur | 10-15 | 10 sq km |
| | 7. Sonkhaliya | 80-100 | 17 sq km |
| | 8. Desert National Park | 200-400 | 3162 sq km |

Local Names

Thanks to its large size and its liking for open areas, the Great Indian Bustard can be easily recognised. It is known as Godawan in western Rajasthan, Nahar-goonjni or Goonjan in Kota and Ajmer regions, Maldhok in Maharashtra, Beta-meka or Ghanad in Andhra Pradesh, Tugdar in the former Nizam State, Yerreladdu in Karnataka, Gorard in Gujarat and Son-chirya or Haank in Madhya Pradesh. In addition to this, there are local dialectical variations to these names, like Hukna, Hukne or Hookan in Shivpuri and Gwalior districts.

The Great Indian Bustard – Then and Now

